(19)

(11) Publication number: **07315869 A**

PATENT ABSTRACTS OF JAPAN

(21) Application number: **06107083**

(51) Intl. Cl.: **C03C 11/00** C04B 14/16

(22) Application date: **20.05.94**

(30) Priority:

(43) Date of application publication: **05.12.95**

(84) Designated contracting states:

(71) Applicant: **AGENCY OF IND SCIENCE & TECHNOL**
KARUSHIIDE:KK

(72) Inventor: **KIMURA KUNIO**
ISHIBASHI OSAMU
MATSUDA KENICHIRO
KIMOTO JUNICHI
OKADA HIROMI

(74) Representative:

(54) PRODUCTION OF HOLLOW GLASS MICROSPHERE

(57) Abstract:

PURPOSE: To efficiently obtain a high-strength hollow microsphere excellent in whiteness degree by sedimenting and separating a powdery or a granular substance of a volcanic glassy deposit in a liquid medium, collecting a fraction having a prescribed particle size, baking and expanding the collected fraction.

CONSTITUTION: This method for producing a hollow glass microsphere is to charge a powdery or a granular substance of a volcanic glassy deposit [e.g. SHIRASU (pumiceous sand), obsidian, perlite, pitchstone, rhyolite, KAISEKI (a kind of welded pyroclastic rock, especially a welded pyroclastic flow deposit present in calderas on Mount ASO, etc., in KYUSHU District, Japan),

FUKUSHIMA HAKUDO (a clay produced in FUKUSHIMA Prefecture, Japan) or MATSUMAE HAKUDO (a clay produced in MATSUMAE District in HOKKAIDO, Japan)] into an aqueous solution containing an alkali metallic salt of an inorganic acid selected from silicic acid or phosphoric acid or a condensed acid thereof (e.g. water glass, sodium hexametaphosphate or sodium pyrophosphate) at 0.05-0.5wt.% concentration, sediment and separate the powdery or granular substance, separate and collect a fraction having 5-10i m particle diameter, then add a 0.3-3N aqueous solution of hydrochloric acid in a volume of 1-1.5ml/g to the fraction, hydrothermally treat the resultant mixture at 150-200° C temperature under 0.5-1.5MPa steam pressure for at least 8hr, subsequently bake and expand the hydrothermally treated mixture at 900-1100°C temperature for 1-60sec. The resultant hollow microsphere is recovered from the baked product by fractionation using a difference in specific gravity.